

Remarks

As noted previously, Applicant appreciates the Examiner's thorough examination of the subject application. The Applicant requests reconsideration and further examination of the subject application based on the foregoing amendments and the following remarks.

Claims 81-105 are pending in the application. In the Office Action mailed 31 March 2008 for the subject application, claims 81-105 were rejected on various statutory grounds, as described in further detail below.

By the present amendment, independent claim 81 has been amended to recite, "A method for providing traffic information comprising route results". This is supported by the context and language of the claim, which makes it clear that the route results forms the traffic information, which is subsequently disseminated to vehicles on route in response to a user request.

Claim 81 has additionally been amended to recite "receiving real time data relating to real time vehicle location from a plurality of vehicle bound probes and other sensory data to ensure and maintain accuracy of segment results". This amendment is supported, for example, by page 16, lines 8-10 of the description as filed. Additionally, claim 81 has been amended to recite, "forming a plurality of route results, each route result being formed based on a plurality of the segment results". Claim 81 has also been amended to include the limitation "wherein the step of forming comprises creating a matrix of vehicle speeds, wherein vehicle speeds over each segment are recorded with specific times of day such that speeds are divided into a plurality of separate time of day intervals". This amendment is supported by claim 89 as originally filed. Additionally, claim 81 has been amended to recite "storing the plurality of route results in a rapid access means in a digital storage means" in order to make it clear that the rapid access means is in the digital storage means as with system claim 98. This amendment is supported, for example, by page 4, lines 17-18 and page 23, lines 4-11. Claim 81 has also been amended to include the limitation of "disseminating said traffic information to vehicles on route via a radio data system, a mobile telephone or computer". This is supported by, for example, page 6, lines 4-

7 and page 15, lines 24-18 of the description as filed. Finally, independent claim 81 has been amended to recite “verifying the real time data wherein verifying comprises correlation of said real time data with data stored in the rapid access means and said other sensory data”. This amendment is supported by page 18, lines 12-15 of the description as filed.

Independent system claim 98 has been amended in a similar manner to claim 81. Claim 89 has been canceled and the dependencies of claims 90 and 91 have been amended accordingly. No new matter has been added.

Claim Rejections – 35 U.S.C. § 102

Concerning items 1-2 of the Office Action, claims 81-85 and 98-102 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,341,255 to *Lapidot et al.* (“*Lapidot '255*”). Applicant traverses the rejection for the following reasons.

One requirement for a rejection under 35 U.S.C. § 102(b) is that the cited reference must teach each and every limitation as arranged in the claim(s) at issue. In this situation, *Lapidot '255* fails to teach or suggest each and every limitation of amended independent claims 81 and 98.

Independent claims 81 and 98 are novel over *Lapidot '255* because the reference does not disclose (or suggest) creating a matrix of vehicle speeds, wherein vehicle speeds over each segment are recorded with specific times of day such that speeds are divided into a plurality of separate time of day intervals. In addition, *Lapidot '255* does not disclose (or suggest) receiving real time data relating to real time vehicle location from a plurality of vehicle bound probes and other sensory data to ensure and maintain accuracy of segment results, and verifying the real time data wherein verifying comprises correlation with data stored in the rapid access means and other received sensory data.

For at least the foregoing reasons, *Lapidot '255* is an improper basis for a rejection of amended claims 81 and 98 under 35 U.S.C. § 102(b), and the rejection should accordingly be

withdrawn.

Claim Rejections – 35 U.S.C. § 103

Concerning items 3-10 of the Office Action, claims 86-97 and 103-105 were rejected under 35 U.S.C. § 103(a) as being unpatentable over various combinations of *Lapidot '255*, noted previously, U.S. Patent Application Publication No. US 2003/0135304 to *Sroub et al.*, U.S. Patent No. 5,465,088 to *Braegus*, U.S. Patent No. 6,490,519 to *Lapidot et al.* ("*Lapidot '519*"), U.S. Patent No. 6,317,686 to *Ran*, and *Grubbs Test for Outliers*. Applicant traverses the rejections and requests reconsideration for the following reasons.

In order for a rejection under 35 U.S.C. § 103(a) to be proper, one requirement (among others) is that the cited reference(s) must teach or suggest each and every element of the claim(s) at issue. This requirement is not met in this situation and amended independent claims 81 and 98 are unobvious (and provides an inventive step) over each of the above-mentioned prior art citations, independently or in any combination, for the following reasons. The dependent claims (e.g., claims 86-97 and 103-105) in the subject application are likewise patentable for at least the reason of their dependency from either of claims 81 or 98.

According to amended claim 81, the step of forming the plurality of route results comprises creating a matrix of vehicle speeds, wherein vehicle speeds over each segment are recorded with specific times of day such that speeds are divided into a plurality of separate time of day intervals. Hence, vehicle speeds are recorded with specific times of day and the speeds are divided into separate "time buckets" throughout the day, where each time bucket may be a five or fifteen minute interval, or whatever time interval is appropriate. *See page 16, lines 24-29* of the description as filed.

For the claimed invention, data corresponding to each time bucket forms historic data, and the historic data is stored in a rapid access matrix in a database, where the lowest level of detail is the speed of a particular type of vehicle on a specific road length at a particular time on a particular day and day of the week. According to the present invention, sufficient historic data

may be aggregated and, after validation, used to forecast trends and create predictions of future vehicle speeds.

As stated in amended claim 81, there is also provided a step of "*receiving real time data relating to real time vehicle location from a plurality of vehicle bound probes and other sensory data to ensure and maintain accuracy of segment results*". In other words, there is an inflow of real-time data used to update the matrix to make sure it remains at its most accurate. *See page 16 lines 8–10.*

Furthermore, amended claim 81 provides a step of "*verifying real time data wherein verifying comprises correlation of said real time data with data stored in the rapid access means and other received sensory data*". In other words, the received real-time data is verified using the above-described historical data (i.e. time buckets of data stored in the rapid access means), as well as other sensory data. *See page 18, lines 12-15.* Hence, the real-time data is cleansed and validated such that the matrix is only updated with the most accurate real-time data. This improved data verification enables particularly accurate journey planning and traffic information.

This type of data verification is not disclosed or suggested in *Lapidot '255*, *Sroub et al.*, *Braegas*, *Lapidot '519*, or *Ran*. Hence, the skilled person having regard to any of the citations independently or in any combination would not arrive at the improved system and method providing improved accuracy of traffic information of the claims of the subject application.

In further support of this, page 15, lines 1-8 of the subject application (also see *Figure 2*) provides that the real-time data (e.g., floating vehicle data) is validated and cleansed before being added to the database, and hence to the matrix. The validation process ensures that input to the database records are reasonable and the time data are created only when sufficient raw data is available to statistically validate the sample size. The validation and cleansing process takes out the "outliers" (errors in reading data) and those data sets which relate to unforeseen and unforecastable events (for example, traffic accidents or security incidents). The cleansing process, for instance, may use statistical processing, but also involves a consideration of the historic data

stored in the database and other sensory data. Examples of the latter include factors such as road speeds and traffic volumes from overhead sensors on the bridges, cameras on the road side or traffic spotters (page 18, lines 15-16). It is therefore not limited only to statistical processing and therefore provides a greater level of accuracy.

This is in contrast to *Lapidot '519*, which does not use historic data to verify and validate the incoming real-time data before that data is used. As pointed out by the Examiner, *Lapidot '519 al.* discloses reporting information to the traveler only if the travel information deviates, in accordance with a predetermined deviation criteria, from a known travel time value. This is not equivalent to the teachings of amended claims 81 and 98, which utilize historical data and other sensory data to verify incoming real-time data, and to use that verified data to update the rapid access matrix. *Lapidot '519* does not disclose (or suggest) a matrix of the type presently claimed, nor does it disclose verification of real-time data as per present claims 81 and 98.

Sroub et al. discloses an experienced based travel database and correlating static data (e.g. location) with dynamic data (e.g. weather, time of day) and experience data (e.g. average speed during certain weather at a certain time). As is evident from the disclosure of *Sroub et al.*, the real-time data is used to supplement static data (see paragraphs 6, 29, 31) and the remote processing system (RPS) integrates real-time data received from a vehicle with data stored in the database in order to re-compute route and predicted arrival time information. See paragraph 33. However, *Sroub et al.* does not disclose or suggest verifying real-time data using stored data in the database and other sensory data. Present claims 81 and 98 therefore are unobvious and provide an inventive step over *Sroub et al.*.

Ran discloses a method for predicting travel times using weather information with the concept of the day of the week being selected from a group comprising a bank holiday such as a Memorial Day or the fourth of July. *Ran* does not, however, disclose verifying real-time data using historic data stored in a database and other sensory data, and updating data stored in a database using the verified real-time data. Present claims 81 and 98 therefore are unobvious and

provide an inventive step over *Ran*.

Similarly, *Braegas* discloses a traffic broadcast receiver but does not teach or suggest verifying real-time data using historic data stored in a database and other sensory data, and updating data stored in a database using the verified real-time data.

Grubbs is a statistical process for removing outliers. *Grubbs* does not teach or suggest validating traffic data based on consideration of historic data stored in a matrix and other sensory data.

Since none of the prior art cited for the rejections discloses validating traffic data based on consideration of historic data stored in a matrix and other sensory data, any combination of such reference would also not disclose this feature. The cited references of *Lapidot '255*, *Sroub et al.*, *Braegus*, *Lapidot '519*, *Ran*, and *Grubbs Test for Outliers* fail to teach or suggest each and every limitation of amended independent claims 81 and 98, from which claims 86-97 and 103-105 depend. Thus, the cited references (whether considered alone or in any combination) form an improper basis for a rejection of claims 86-97 and 103-105 under 35 U.S.C. § 103(a), and Applicant requests the rejections be withdrawn accordingly.

Conclusion

In summary, the claimed invention uses the constant and regular inflow of data from vehicle probes in order to regularly update the matrix in the Road Timetable. It is this regular updating process that ensures and maintains the accuracy of the predicted journey planning distances and times for the Road Timetable, e.g., as described on page 16, lines 8-10 of the application as filed. In contrast to any of the prior art teachings, the inflowing data is verified using historical data and other sensory data, meaning that there is a greater accuracy of journey planning and traffic information.

For the reasons stated above, Applicant respectfully submits that all claims under consideration in the pending application are in condition for allowance, and a timely Notice of

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Allowance is requested accordingly.

Please charge any fees that may be due, or credit any overpayment, to Deposit Account Number 50-1133. The Examiner is invited to telephone the undersigned attorney to discuss any aspect of the subject application or this paper.

Respectfully submitted,

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